**Statement of Purpose**

I would be mendacious if I say that I expected to be interested in fields like Computer Vision and Machine Learning when I first stepped into my university. However, as I had the opportunity to be closely acquainted with these fields later on, I found them so intriguing and nuanced that I made up my mind in building my career and conduct research in these fields. Years from now, I envision myself as a researcher in institutes that work on Computer Vision and Machine Learning.

My father being an electrical engineer, I grew up in an environment full of tools and electrical and electronic equipment. I used to watch my dad with awe working on circuits and fixing things. He introduced me to computers and taught me how to use it. He used to show me different hardware components and how they are assembled. As I grew up using computer, I was so amazed and fascinated by it that I aspired to become a graduate in Computer Science. My dream turned into reality when I got an opportunity to be admitted in the department of Computer Science and Engineering in Islamic University of Technology (IUT), one of the leading universities in Bangladesh. The selection process of IUT is extremely rigorous. About 2000 students having top results in the secondary and higher secondary exams are allowed to sit for an admission test, out of which only 235 students qualify. IUT provided me the perfect platform to nurture my knowledge and skills. Throughout my undergraduate studies I was put through intense academic pressure, having to take 181.5 credits, despite which I was able to successfully complete my undergraduate courses, obtaining highest grades in most of the courses.

During my undergraduate studies, I found keen interest in subjects like Algorithm, Machine Learning, Artificial Intelligence and Image Processing. I still remember excitement of learning new algorithms and implementing them to solve complex problems. I was introduced to the course of Machine Learning in my junior years. I was deeply motivated by its underlying idea that computers can be made to “learn” things. I was amazed by how the algorithms applied in AI and Machine Learning could give rise to the impression that the machines are intelligent and can logically respond to inputs. Later on, when I came across the course of Image Processing, I felt totally immersed into it and it drove me to explore further and work on it. Besides these, I also did several academic projects throughout my undergraduate studies. All the projects were highly appreciated by the course instructors and earned me highest grades.

I elected to do my bachelor thesis in medical image processing because I felt it was one of the ways of contributing to medical science that can affect the lives of many people. I proposed a mechanism for automatically detecting lung tumors from the CT images of lungs using textural features after segmenting the lung parenchyma. While doing my undergraduate thesis I came to know about Computer Vision, a field that intertwines Machine Learning and Image Processing. My thesis required the application of Computer Vision since classifying tumorous regions from CT images needed the system to learn. For my research, I had to devote hours in perusing many published papers on medical imaging and textural features, analyzing the solutions proposed. I would ponder over any shortcomings in the papers and try to come up with a solution of my own. Overall, my thesis taught me how to conduct research properly and inspired me to think of a career in research. At the end of the final year, my thesis was well appreciated by the panel of professors to whom I defended it and I obtained the highest grade. I presented my work in a workshop of ‘Asian Conference on Computer Vision 2014’ and it will be published in the Springer’s Lecture Notes on Computer Science (LNCS) series.

Besides my academics, I was also one of the executive members of the IUT Computer Society which organizes National ICT fest every year where students from different universities all over the country come and participate in different ICT based contests. As one of the Secretary of the committee, I was in charge of managing the programming contest and IT Business Idea contest in the fest held in 2013. This experience helped me to develop my organizational and interpersonal relationship skills. I also participated in several programming contests during my undergraduate studies. I participated in IUT Inter Departmental Programming Contest, a contest organized by CSE department of IUT, three times and obtained 1st place in 2012. I also participated in National ICPC in the same year.

After completing my Bachelor’s degree, securing 2nd position in a highly competitive class of 47, I joined Islamic University of Technology (IUT) as a lecturer in December 2013. I have conducted courses on Numerical Analysis and Database Management Systems and have instructed the corresponding labs. I have also conducted labs on Database Concepts and Programming, Office Automation, Visual Programming and Pattern Recognition. A career in teaching has provided me a glaring opportunity to gather a work experience in teaching and to be in an environment that is congenial to research.

It was in this vein, that I decided to advance my career in research and it prompted my interest in the PhD. program at the department of Computer Science in Stony Brook University. I am aware that the Stony Brook University is a top university and that it is one of the best research centers for Computer Science. Computer Vision is the field in which I am interested the most, since this is close to the field in which I have conducted my Bachelor's thesis and in which I have the most experience in research. I am also interested in Artificial Intelligence and Machine Learning as these fields are closely related to computer vision. I am well aware that admission into this university is highly competitive, but I would like to consider myself as a potential candidate for the program because of my enthusiasm and zeal in conducting research in the respective fields and my eagerness to work hard.

I am very eager to work under and with some of the finest minds in Computer Science so that I may be able to conduct valuable research and increase the depth of my knowledge. I wish to earn a Ph.D. and follow this with a career in research. I hope that my background and qualifications would be suitable to enroll me into the Ph.D. program of Computer Science at Stony Brook University.